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Summary

Executive Summary

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Mortality outcomes provide insights into the health and well-being of populations. The richer this information, the more opportunity it offers for researchers to understand the interplay between health, lifestyle and socioeconomic status and to identify groups in society who are at risk of premature death. Accordingly, governments can then base policy settings and resource allocation on better evidence.

The Australian Bureau of Statistics (ABS), with the support of State and Territory Registrars of Births Deaths and Marriages, has created a new information base for research into mortality and health outcomes in Australia by combining Death Registrations data with data from the 2011 Australian Census of Population and Housing.

The purpose of this report is to describe the record linkage process and demonstrate the potential of the linked dataset to provide valuable insights into contextual factors associated with mortality.

Since 2011, the ABS has used statistical data integration to combine a growing number of administrative datasets with the Census. The intent has been to enrich the value and maximise the use (and re-use) of publicly-collected information – thereby expanding the evidence base available to support research and policy development to enhance the well-being of society.

The Death Registrations data collected and maintained by State and Territory Registrars of Births, Deaths and Marriages are of very high quality. Mortality outcomes by cause of death are able to be accurately monitored because of generally high standards of death certification and access to coronial information through the National Coronial Information System. The Census is a regular snapshot of the Australian population with a rich set of sociodemographic information, including living arrangements, educational attainment and labour force status. By combining these data sources, the ABS has created a breakthrough information base for understanding contextual factors associated with mortality.

The ABS conducted a Death Registrations to Census record linkage in 2012. The primary aim of that project was to evaluate the consistency of Indigenous identification, as reported in the Death Registrations data and Census data, and thereby provide input into the compilation of life tables and life expectancy estimates for Aboriginal and Torres Strait Islander people.

The terms of the project permitted the use of name and address information, in conjunction

with other personal characteristics reported on both datasets, to create a gold standard record linkage. This record linkage could be used to evaluate future record linkage activities, but dissemination of the gold standard linkage to external users was precluded. Details of all names and addresses were removed from the Census and Death Registrations datasets at the conclusion of the 2011 Census processing period.

The linked dataset created for this study will be available and suitable for much wider analytical applications. This report describes the record linkage methodology, assesses the properties of the new linked dataset relative to the gold standard linkage created for the earlier study, and proposes weighting strategies that can support appropriate statistical inference.

A particular focus of the report is to alert users to important, and possibly unfamiliar issues that arise in the analysis of linked data. Familiarity with these issues will assist users to frame suitable questions, select appropriate weighting options, conduct sound inference and recognise the magnitude and direction of potential biases in their results.

The report concludes that, with careful and informed use, the linked dataset can support a wide range of new analytical investigations. That is, it represents a significant advance in the information base available for understanding mortality in Australia.

There is, however, room for improvement. Future Death Registrations to Census record linkages will benefit from greater use of name information, either directly or in the form of anonymised name codes. Pertinent to this issue is the announcement, in December 2015, that the ABS will retain names and addresses collected in the 2016 Census of Population and Housing to support future data integration activities.

The use of name and address information may be expected to deliver more successful linkage outcomes for otherwise difficult-to-link populations – in particular, Aboriginal and Torres Strait Islander people living in remote communities. Indeed, while this report has focussed on the utility of the linked dataset as an information base for the general Australian population, further research is required to develop its capacity to provide insights into mortality outcomes for the Aboriginal and Torres Strait Islander population.

About this Release

Death registrations are provided to the Australian Bureau of Statistics by the State and Territory Registrars of Births, Deaths and Marriages. In this project, the records of individuals whose deaths were registered in 2011-12 have been augmented with personal information obtained from the 2011 Census. This has been achieved through a process of probabilistic record linkage. The resulting linked dataset promises to contribute significantly to a better understanding of health risk factors, leading to more informed targeting of health policy and support measures for the Australian community. This paper describes the creation of the linked dataset and provides necessary background material and advice for potential users.